

# 1803

### R-F POWER AMPLIFIER PENTODE

Filament	Thoriated Tungst	en
Voltage Current	10 5	a-c or d-c volts amp.
Transconductance		umhos
Direct Interele	ctrode Capacitances:	).15 max. µµf 17 µµf
Output Overall Length		29 ppf 9-1/16" ± 3/16"
Seated Height Maximum Diamete	r	8-5/16" ± 3/16" 2-9/16"
Bulb Cao	•	T-20 Medium
Base RCA Socket	Medium Shell Giant	5-Pin Micanol, Bayonet Stock No.9927

MAXIMUM RATINGS and TYPIC	AL OPE	RATING	COND	ITIONS	
R-F POWER AMPLIFIER -	- Class	B Te1	ephon	<u>y</u>	
Carrier conditions per tube for use a	vith a m	ax. nod	ulatio	n fact.	of 1.0
D-C Plate Voltage			2000	max.	volts
D-C Suppressor Voltage (Grid #3	)			max.	volts
D-C Screen Voltage (Grid #2)				max.	
D-C Plate Current				max.	
Plate Input			180	max.	watts
Suppressor Input			10	max.	watts
Screen Input			125	max. max.	watts
Plate Dissipation Typical Operation:			123	max.	watts
D-C Plate Voltage	1250	1500	2000		vo1ts
D-C Suppressor Voltage	40	40	40		voits
D-C Screen Voltage**	500	550			volts
D-C Grid Voltage (Grid #1)	-30	-35			volts
Peak R-F Grid Voltage	90	70	55		volts
D-C Plate Current	130	110			ma.
D-C Screen Current	33	30	20		ma.
D-C Grid Current	8	5		appro	
Driving Power*	4.5	3.0			x.watts
Power Output	52	53	53	appro	x.watts
* At crest of a-f cycle with modulat	ion fact	or of 1	.0.		
O For a-c filament supply.					
<ul> <li>Obtained from a fixed supply or from</li> </ul>	suitabi	lyby-pa:	ssed ca	thode r	esistor.
SUPPRESSOR-MODULATED R-F POWER	AMPLIF	IER -	Clas	s C Te	1ephony
Carrier conditions per tube for use	with a s	ax. nod	ulatio	n fact.	of 1.0
D-C Plate Voltage				max.	
D-C Screen Voltage (Grid #2)				max.	volts
D-C Grid Voltage (Grid #1)				max.	volts
D-C Plate Current			110	max.	ma.
D-C Grid Current			100	max.	ma.
Plate Input			180	max. max.	watts
Screen Input			20	max.	watts

AUG. 15, 1944



(continued f	R-F POWER AMPLIFIER PENTODE							
Diata Discipation	rom prece	ding page	125	max.	watts			
Plate Dissipation Typical Operation:			123	IIIAX.	Walls			
D-C Plate Voltage	1250	1500	2000		voits			
D-C Suppressor Voltage	<b>-</b> 70	-90	-110		volts			
D-C Screen Voltage	13000	17000	35000		ohms			
<u> </u>	f <b>–</b> 110	-100	-100		volts			
		5000	7000		ohms			
Peak A-F Suppressor Volt.		130	150		volts			
Peak R-F Grid Voltage	200	190	170		voits			
D-C Plate Current	100	100	80		ma.			
D-C Screen Current	70	70	48		ma.			
D-C Grid Current	22	20		appro:				
Driving Power	4	3.5			x.watts			
Power Output	40	50			x.watts			
·								
$^{\Delta}$ Voltage taken from unmodulated	plate-vol	tage sup	oply thi	rough r	esistor.			
☐ From fixed supply, grid resisto	r (5000, 50	00, 7000	, or car	thode r	esistor.			
GRID-MODULATED R-F POWER	AMPLIFIE	R - C1a	ass C T	e leph	ony			
Carrier conditions per tube for a	se with a	max. mo	dulation	fact.	of 1.0			
			2000		volts			
D-C Plate Voltage				max.	volts			
D-C Suppressor Voltage (Grid	1 # 51 1			max.	volts			
D_C Screen Voltage (Grid #2	'		-500		volts			
D-C Grid Voltage (Grid #1)				max.	ma.			
D-C Plate Current Plate Input				max.	watt:			
				max.	watts			
Suppressor Input Screen Input				max.	watts			
				max.	watts			
Plate Dissipation Typical Operation:			123	IIIQX.	watt.			
	1250	1500	2000		voits			
D-C Plate Voltage D-C Suppressor Voltage	40	40	40		volts			
D-C Screen Voltage**	500	550	600		volts			
D-C Grid Voltage	-100	-90	-80		volts			
	160	130	100		volts			
Peak R-F Grid Voltage	75	65	50		volts			
Darl A. E. Calid Valleage		0.0	JŲ					
Peak A-F Grid Voltage		110	ΩΛ					
D-C Plate Current	130	110	80 20		ma.			
D-C Plate Current D-C Screen Current	130 30	25	20	30050	ma.			
D-C Plate Current D-C Screen Current D-C Grid Current	130 30 8	25 6	20 4	appro	ma. x.ma.			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power*	130 30 8 4	25 6 3	20 4 2	appro	ma. x.ma. x.watt			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output	130 30 8 4 52	25 6 3 53	20 4 2 53	appro	ma. x.ma. x.watts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output *At crest of a-f cycle with modu	130 30 8 4 52 lation fa	25 6 3 53 stor of :	20 4 2 53	appro appro	ma. x.ma. x.watts x.watts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output	130 30 8 4 52 lation fa	25 6 3 53 stor of :	20 4 2 53	appro appro	ma. x.ma. x.watts x.watts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output  *At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI  *Pentod.	130 30 8 4 52 Nation fa R AMPLIF	25 6 3 53 stor of : IER - C	20 4 2 53	appro appro Telep	ma. x.ma. x.watts x.watts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output *At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI	130 30 8 4 52 Nation fa R AMPLIF	25 6 3 53 stor of : IER - C	20 4 2 53	appro appro Telep	ma. x.ma. x.watts x.watts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output *At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI	130 30 8 4 52 Nation fa R AMPLIF	25 6 3 53 stor of : IER - C	20 4 2 53 1.0. lass C dulation 1600	appro appro Telep fact. max.	ma. x.ma. x.watts x.watts hony  of 1.0			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output *At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI  Pentod. Carrier conditions per tube for the conditions of the condit	130 30 8 4 52 lation fa R AMPLIF e Connec use with a	25 6 3 53 stor of : IER - C	20 4 2 53 1.0. 1ass C dulation 1600 500	Telep  fact. max. max.	ma. x.ma. x.watts x.watts hony  of 1.0 voits voits			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI Pentod Carrier conditions per tube for to D-C Plate Voltage	130 30 8 4 52 Nation fa R AMPLIF e Connec use with a	25 6 3 53 stor of : IER - C	20 4 2 53 1.0. 1ass C dulation 1600 500	appro appro Telep fact. max.	ma. x.ma. x.watts x.watts hony  of 1.0 volts volts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power" Power Output "At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI Pentod Carrier conditions per tube for a D-C Plate Voltage D-C Suppressor Voltage (Grid #2	130 30 8 4 52 Nation fa R AMPLIF e Connec use with a	25 6 3 53 stor of : IER - C	20 4 2 53 1.0. 1ass C dulation 1600 500	Telep  fact. max. max. max.	ma. x.ma. x.watts x.watts hony  of 1.0 volts volts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output *At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI Pentod. Carrier conditions per tube for to D-C Plate Voltage D-C Suppressor Voltage (Grid	130 30 8 4 52 Nation fa R AMPLIF e Connec use with a	25 6 3 53 stor of : IER - C	20 4 2 53 1.0. lass C dulation 1600 500 500 -500	Telep  fact. max. max. max.	ma. x.ma. x.watts x.watts			
D-C Plate Current D-C Screen Current D-C Grid Current Driving Power* Power Output  **At crest of a-f cycle with modu PLATE-MODULATED R-F POWEI  **Pentod* Carrier conditions per tube for to D-C Plate Voltage D-C Suppressor Voltage (Grid *2 D-C Grid Voltage (Grid *1)	130 30 8 4 52 Nation fa R AMPLIF e Connec use with a	25 6 3 53 stor of : IER - C	20 4 2 53 1.0. 1ass C 4ulation 1600 500 500 -500 160	Telep  fact. max. max. max.	ma. x.ma. x.watts x.watts hony  of 1.0 voits voits voits			



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## R-F POWER AMPLIFIER PENTODE

(continued from Plate Input	preced	ling pag	e) 250	max.	watts
Suppressor Input				max.	watts
Screen Input				max.	watts
Plate Dissipation				max.	watts
Typical Operation:				max.	watts
D-C Plate Voltage		1250	1600		volts
		100	1000		volts
D-C Suppressor Voltage	,	18000	27000		
D-C Screen Voltage #	- {				ohms volts
		350	400		
D-C Grid Voltage ▲	{	-80	-80		volts
B   B = 0 1   V   V	ι	4000	4000		ohms
Peak R-F Grid Voltage		200	190		volts
D-C Plate Current		150	150		ma.
D-C Screen Current		50	45		ma.
D-C Grid Current		30		appro	
Driving Power		6	5		x.watts
Power Output		120	155	appro	x.watts
# From modulated fixed supply or more resistor.	dulate	d plate-	-voltage	supp1y	through
PLATE-MODULATED R-F POWER AN	PLIFI	ER - C	lass C	Te lep	hony
Tetrode Connection - Grid					
Carrier conditions per tube for use u	vith a	max. mo	dulation	fact.	of 1.0
D-C Plate Voltage			1600	max.	vo1ts
D-C Screen Voltage (Grids #2 &	#3)		500	max.	volts
D-C Grid Voltage (Grid #1)			-500	max.	vo1ts
D-C Plate Current			160	max.	ma.
D-C Grid Current			50	max.	ma.
Plate Input			250	max.	watts
Screen Input			30	max.	watts
Plate Dissipation			85	max.	watts
Typical Operation:					
D-C Plate Voltage		1250	1600		vo1ts
	ſ	15000	20000		ohms
D—C Screen Voltage ##	1	130	130		voits
0.00111111	<u> </u>	-180	-180		vo1ts
D—C Grid Voltage ▲	1	4000	4000		ohms
Peak R-F Grid Voltage	`	305	320		volts
D-C Plate Current		150	150		ma.
D-C Screen Current		75	75		ma.
D-C Grid Current		4.5	45	appro	x.ma.
Driving Power		15	15		x.watts
					x.watts
Power Output		125			
## Preferably from unmodulated plate-  **Obtained from grid resistor of v methods.		ge suppl	y throug	h resi	
## Preferably from unmodulated plate-  Obtained from grid resistor of v	/alue s	ge suppl	y through	n resis	elf-bias
## Preferably from unmodulated plate- Obtained from grid resistor of wathods.  R-F POWER AMPLIFIER & OSCIL  Pentode Con	value s LATOR necti	ge supply shown, o  - Clas  on	y throug r by pai	n resis rtial se elegra	elf-bias
## Preferably from unmodulated plate- Obtained from grid resistor of v methods.  R-F POWER AMPLIFIER & OSCIL  Pentode Con Key-down conditions per fi	value s LATOR necti	ge supply shown, o  - Clas  on	y throug r by pai ss C Te	nh resistial selegrap	ohy
## Preferably from unmodulated plate-  Obtained from grid resistor of v methods.  R-F POWER AMPLIFIER & OSCIL  Pentode Con  Key-down conditions per fi D-C Plate Voltage	LATOR necti tude wi	ge supply shown, o  - Clas  on	y through the particular of th	tial selegrap	ohyvolts
## Preferably from unmodulated plate- Obtained from grid resistor of v methods.  R-F POWER AMPLIFIER & OSCIL  Pentode Con Key-down conditions per fi	LATOR necti tude wi	ge supply shown, o  - Clas  on	y through by pair ss C Te codulation 2000 500	nh resistial selegrapon§ max. max.	elf-bias



(continued		eding pag	e)		
D-C Screen Voltage (Grid #2	:)		600	max.	volts
D-C Grid Voltage (Grid #1)			-500	max.	volts
D-C Plate Current			175	max.	ma.
D-C Grid Current			50	max.	ma.
Plate Input			350	max.	watts
Suppressor Input			10	max.	watts
Screen Input			30	max.	watts
Plate Dissipation			125	max.	watts
Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	40	40	40		volts
D-C Screen Voltage ♦	500	500	500		voits
, ,	r <b>-9</b> 0	-90	-90		volts
D-C Grid Voltage	₹ 415	415	415		ohms
ľ	7500	7500	7500		ohms
Peak R-F Grid Voltage	` 175	175	175		volts
D-C Plate Current	160	160	160		ma.
D-C Screen Current	45	45	45		ma.
D-C Grid Current	12	12	12	appro	x.ma.
Driving Power	2	2			x.watts
Power Output	130	160	210		x.watts

 Obtained from fixed supply, cathode resistor (#15), by grid resistor (7500), or by combination methods.

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Tetrode Connection - Grids #2 & #3 tied together

Key-down conditions per tube without modulation §

1 20, 20 20 20 20 20 20 20 20 20 20 20 20 20	,				
D-C Plate Voltage			2000		olts
D-C Screen Voltage (Grids #2	2 & #3)		600		olts
D-C Grid Voltage (Grid #1)					olts
D-C Plate Current			175	max. ma	a.
D-C Grid Current			50	max. ma	a.
Plate Input			350	max. wa	atts
Screen Input			30	max. wa	atts
Plate Dissipation			125	max. w	atts
Typical Operation:					- 1
D-C Plate Voltage	1250	1500	2000	V	oits
D-C Screen Voltage	150	150	150	V	olts
,	r - 90	-90	-90	V	o1ts
D-C Grid Voltage®	445	445	445	ol	hms
, , , ,	3500	3500	3500	ol	hms
Peak R-F Grid Voltage	190	190	190	V	olts
D-C Plate Current	160	160	160	m.	a.
D-C Screen Current	15	15	15	m	a. [
D-C Grid Current	28	27	26	approx.m	a.
Driving Power	4.6	4.4	4.4	approx.w	atts
Power Öutput	130	160	210	approx. w	atts

♦ use of series resistor is not recommended.

← Indicates a change。 §, \*\*: See next page.

DATA

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Obtained from fixed supply, cathode resistor (445), by grid resistor (3500), or by combination methods.

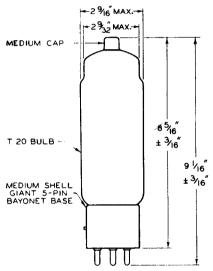




§ Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier condition.

Preferably obtained from a separate source, or from the plate-voltage supply with a voltage divider.

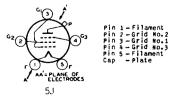
Data on operating frequencies for the 803 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.



TUBE MOUNTING POSITION VERTICAL: Base up or down.

92CM-4424R3

BOTTOM VIEW OF SOCKET CONNECTIONS



Indicates a change.



